Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*				R-1 ITEM NOMENCLATURE PE 0305208F: *Distributed Common Ground Systems*							
COST ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**	**FY 2014**	**FY 2015**	**FY 2016**	**FY 2017**	**Cost To Complete**	**Total Cost**
Total Program Element	94.272	85.724	63.501	-	63.501	36.222	30.478	30.114	30.912	Continuing	Continuing
674826: *Common Imagery Ground / Surface Systems*	83.474	57.215	26.854	-	26.854	19.988	20.563	21.706	21.918	Continuing	Continuing
675265: *Common Imagery Processor (CIP)*	10.798	10.709	-	-	-	-	-	-	-	Continuing	Continuing
676025: *Data Compression*	-	17.800	29.699	-	29.699	9.175	2.714	1.004	1.492	Continuing	Continuing
676028: *Dynamic Time Critical Warfighting Capability*	-	-	6.948	-	6.948	7.059	7.201	7.404	7.502	Continuing	Continuing

Note

In FY 2013, Distributed Common Ground System (DCGS) Integrated Backbone (DIB) transferred to PE 0305240F, "Support to Distributed Common Ground System (DCGS) Enterprise", in order to improve visibility into this effort. AF is lead service under the auspices of USD(I).

In FY 2013, DCGS-Imagery (DCGS-I) Testbed transferred to PE 0305240F, "Support to Distributed Common Ground System (DCGS) Enterprise", in order to improve visibility into this effort. AF is lead service under the auspices of USD(I).

In FY 2013, DCGS Enterprise transferred to PE 0305240F, "Support to Distributed Common Ground System (DCGS) Enterprise", in order to improve visibility into this effort. AF is lead service under the auspices of USD(I).

In FY 2013, Common Imagery Processor (CIP) transferred to PE 0305240F, "Support to Distributed Common Ground System (DCGS) Enterprise", in order to improve visibility into this effort. AF is lead service under the auspices of USD(I).

A. Mission Description and Budget Item Justification

The DoD Distributed Common Ground/Surface System (DCGS) Program is a cooperative effort between the Services and National Agencies to provide world-wide ground/surface systems capable of receiving, processing, exploiting, and disseminating data from airborne and national reconnaissance sensors/platforms and commercial sources. The DCGS program is developing a family of systems capable of supporting all levels of conflict, interoperable with reconnaissance platforms and sensors, and integrated into the Joint Command, Control, Communication, Computer, and Intelligence (C4I) environment. The program integrates architectures and standards from DCGS Imagery architecture for Imagery Intelligence (IMINT), Joint Airborne SIGINT Architecture (JASA) for Signals Intelligence (SIGINT), and Joint Airborne Measurement and Signature Intelligence (MASINT) Architecture (JAMA) for MASINT, and all-source analyses to Combat Air Forces and Combatant Commanders.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*

AF DCGS provides the capability to task intelligence sensors, and receive, process, exploit, and disseminate data from airborne and national reconnaissance platforms and commercial sources. AF DCGS is a 'system of systems' interconnected by a robust communications structure to provide data sharing capabilities between intelligence collectors, exploiters, producers, disseminators, and users. AF DCGS has multiple core locations, CONUS and OCONUS based. Several other AF DCGS systems are distributed among Air Force operational units at Numbered Air Force and Air National Guard locations, to support Joint Task Force commanders and Air Operations Centers (AOC). The CONUS based systems are capable of reach back operations via data link relay and satellite relay connectivity to forward operating sensors.

AF DCGS provides critical data and significant support for Time Sensitive Targeting (TST) operations. This support will be enhanced with the integration of software tools and data interfaces to process and exploit data from new/upgraded sensors, by the demonstration and integration of enhanced fusion/exploitation aid technologies and by the transformation of AF DCGS to a net centric, service oriented architecture construct. By converting from a stovepipe system of systems to a web based integrated net centric Intelligence, Surveillance, and Reconnaissance (ISR) management capability, AF DCGS will provide the Joint Forces Air Component Commander (JFACC) the capability to: 1) dynamically visualize and command ISR assets and the information in the AOC 2) quickly and effectively synchronize AF DCGS ISR operations, collection capabilities, and information with the AOC's combat objectives to improve the TST process and reduce timelines.

AF DCGS will modernize through sustainment by integrating the necessary technologies and tools to provide increased capabilities and meet emerging and urgent user operational needs. These efforts will also integrate commercial and government fact-of-life version upgrades to provide current technologies and achieve necessary application and services. The next series of upgrades will meet the operational need to integrate new and/or improved sensor capabilities and enhance interoperability by migrating to a service oriented architecture and improving data sharing ability in compliance with DoD direction.

AF DCGS will continue to modernize its network management and interface capabilities by upgrading and migrating its network to a standardized interface configuration which is easy to expand and adapt to new technologies while growing capacity requirements. Efforts will also focus on network management systems and the ability to manage critical bandwidths to meet operational surges and distributed ops requirements. The program will also provide a capability to efficiently compress and decompress airborne ISR sensor data and transmit real/near-real time over existing data/communications links to tactical users.

The Air Force has been charged by DoD with developing, upgrading and managing the DCGS Integration Backbone (DIB) for all the Services to provide common DCGS enterprise services and interoperability at the data level. Using the DIB, AF DCGS modernization will transform AF DCGS from its existing proprietary system to a net-centric service oriented architecture.

The DCGS Imagery (DCGS-I) Testbed is an integration and test environment, which is used by the Services and Agency program offices to conduct integration of DCGS components and test interoperability interfaces with new sensors, applications, and net centric operations. This testbed also supports the integration and testing of DoD DCGS components prior to introduction into the operational environment. Upgrades to the DCGS-I Testbed will ensure it maintains current with DCGS standards and architecture.

AF DCGS also participates in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Air Force	DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*

The Common Imagery Processor (CIP) is a major interoperability initiative to develop a common sensor processing element within DCGS-Imagery architecture. The function of the CIP is to accept airborne imagery data, process it into an exploitable image, and output the image to other elements within DCGS-I. Efforts are underway to augment the CIP baseline to process data from upgraded/new sensors.

Activities include studies and analysis to support both current program planning and execution and future program planning.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	93.398	90.724	88.457	-	88.457
Current President's Budget	94.272	85.724	63.501	-	63.501
Total Adjustments	0.874	-5.000	-24.956	-	-24.956
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-5.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	9.150	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustments	-8.276	-	-24.956	-	-24.956

Change Summary Explanation

FY11 Changes: +$9.15M MIP OMNIBUS Reprogramming

FY11 Congressional General Reduction of 8.276M in Other Adjustment row.

FY12 Congressional Directed Reduction of 5.0M from FY12 Defense Appropriation Act. Reason: contract delays

FY13 Changes: -$24.55M Transferred to new PE 0305240F "Support to DCGS Enterprise"; remaining funding decrease due to higher Department of Defense priorities.

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305208F: *Distributed Common Ground Systems*	PROJECT 674826: *Common Imagery Ground / Surface Systems*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
674826: *Common Imagery Ground / Surface Systems*	83.474	57.215	26.854	-	26.854	19.988	20.563	21.706	21.918	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

AF DCGS provides the capability to task intelligence sensors, and receive, process, exploit, and disseminate data from airborne and national reconnaissance platforms and commercial sources. AF DCGS is a 'system of systems' interconnected by a robust communications structure to provide data sharing capabilities between intelligence collectors, exploiters, producers, disseminators, and users. AF DCGS has multiple core locations, CONUS and OCONUS based. Several other AF DCGS systems are distributed among Air Force operational units at Numbered Air Force and Air National Guard locations, to support Joint Task Force commanders and Air Operations Centers (AOC). The CONUS based systems are capable of reach back operations via data link relay and satellite relay connectivity to forward operating sensors.

AF DCGS provides critical data and significant support for Time Sensitive Targeting (TST) operations. This support will be enhanced with the integration of software tools and data interfaces to process and exploit data from new/upgraded sensors, by the demonstration and integration of enhanced fusion/exploitation aid technologies and by the transformation of AF DCGS to a net centric, service oriented architecture construct.

AF DCGS will modernize through sustainment by integrating the necessary technologies and tools to provide increased capabilities and meet emerging and urgent user operational needs. These efforts will also integrate commercial and government fact-of-life version upgrades to provide current technologies and achieve necessary application and services. The next series of upgrades will meet the operational need to integrate new and/or improved sensor capabilities and enhance interoperability by migrating to a service oriented architecture and improving data sharing ability in compliance with DoD direction.

AF DCGS will continue to modernize its network management and interface capabilities by upgrading and migrating its network to a standardized interface configuration which is easy to expand and adapt to new technologies while growing capacity requirements. Efforts will also focus on network management systems and the ability to manage critical bandwidths to meet operational surges and distributed ops requirements. The program will also provide a capability to efficiently compress and decompress airborne ISR sensor data and transmit real/near-real time over existing data/communications links to tactical users.

The Air Force has been charged by DoD with developing, upgrading and managing the DCGS Integration Backbone (DIB) for all the Services to provide common DCGS enterprise services and interoperability at the data level. Using the DIB, AF DCGS modernization will transform AF DCGS from its existing proprietary system to a net-centric service oriented architecture.

The DCGS Imagery (DCGS-I) Testbed is an integration and test environment, which is used by the Services and Agency program offices to conduct integration of DCGS components and test interoperability interfaces with new sensors, applications, and net centric operations. This testbed also supports the integration and

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305208F: *Distributed Common Ground Systems*	PROJECT 674826: *Common Imagery Ground / Surface Systems*

testing of DoD DCGS components prior to introduction into the operational environment. Upgrades to the DCGS-I Testbed will ensure it maintains current with DCGS standards and architecture.

AF DCGS also participates in the development, testing, and implementation of international standards (to include NATO standardization agreements) to ensure joint, allied, and coalition interoperability.

This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Capabilities Upgrade	5.626	4.385	2.559
Description: Develop and integrate new/improved sensors and increase capacity and data availability. ***FY 2011 Accomplishments:*** Continued development efforts to meet operational need to integrate new and improved sensors, increase capacity and data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct. ***FY 2012 Plans:*** Continue development efforts to meet operational need to integrate new and improved sensors, increase capacity and data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct. ***FY 2013 Plans:*** Will continue development efforts to meet operational need to integrate new and improved sensors, increase capacity and data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct.			
Title: Geospatial Intelligence (GEOINT)	40.090	25.927	14.114
Description: Develop integrate new/improved sensors for exploitation and analysis of imagery and geospatial information. ***FY 2011 Accomplishments:*** Continued efforts to meet operational need to integrate new and improved sensors, increase capacity and imagery and geospatial data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct. ***FY 2012 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Continue efforts to meet operational need to integrate new and improved sensors, increase capacity and imagery and geospatial data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct. ***FY 2013 Plans:*** Will continue efforts to meet operational need to integrate new and improved sensors, increase capacity and imagery and geospatial data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct.			
Title: Systems Release Upgrades ***Description:*** Continue to upgrade and evolve the DCGS communications platform across the various architectures. ***FY 2011 Accomplishments:*** Continued efforts to meet operational need to increase capacity and communication data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct. ***FY 2012 Plans:*** Continue efforts to meet operational need to increase capacity and communication data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct. ***FY 2013 Plans:*** Will continue efforts to meet operational need to increase capacity and communication data availability, and comply with DoD direction to improve interoperability through migration to a service oriented architecture construct.	12.200	2.000	1.428
Title: Data Links ***Description:*** Continue upgrade of AF DCGS data link architecture. ***FY 2011 Accomplishments:*** Continued upgrade of AF DCGS capability to transmit and receive information. ***FY 2012 Plans:*** Continue upgrade of AF DCGS capability to transmit and receive information. ***FY 2013 Plans:*** Will continue upgrade of AF DCGS capability to transmit and receive information.	1.700	4.500	3.213
Title: DCGS Integration Backbone (DIB)	7.100	7.170	-

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Description: Upgrade, improve and manage the DCGS Integration Backbone (DIB). ***FY 2011 Accomplishments:*** Upgraded, improved, and managed the DIB. ***FY 2012 Plans:*** Upgrade, improve and manage the DIB.			
Title: Network Communications ***Description:*** Continue upgrade of AF DCGS communications network. ***FY 2011 Accomplishments:*** Continued upgrading AF DCGS communications network. ***FY 2012 Plans:*** Continue upgrade of AF DCGS communications network. ***FY 2013 Plans:*** Will continue upgrade of AF DCGS communications network.	7.200	3.600	2.570
Title: DCGS Enterprise ***Description:*** Continue to evolve DCGS architectures and standards and manage DCGS IPT effort for USD(I) ***FY 2011 Accomplishments:*** Continued evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS IPT effort for USD(I). ***FY 2012 Plans:*** Continue evolving DCGS architectures and standards for commonality and interoperability across intelligence disciplines to include NATO interoperability and management of DCGS IPT effort for USD(I)	2.644	2.552	-
Title: DCGS-I Testbed ***Description:*** Continue DCGS-I Testbed development and upgrades. ***FY 2011 Accomplishments:*** Continued DCGS-I Testbed development and upgrades. ***FY 2012 Plans:***	4.014	4.111	-

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305208F: *Distributed Common Ground Systems*	PROJECT 674826: *Common Imagery Ground / Surface Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Continue DCGS-I Testbed development and upgrades.			
Title: Geospatial Product Library (GPL) ***Description:*** Develop and integrate a greater variety of Imagery Intelligence sources and geospatial visualization capabilities in the GPL. ***FY 2011 Accomplishments:*** Continued to develop and integrate a greater variety of Imagery Intelligence sources and geospatial visualization capabilities in the GPL. ***FY 2012 Plans:*** Continue to develop and integrate a greater variety of Imagery Intelligence sources and geospatial visualization capabilities in the GPL. ***FY 2013 Plans:*** Will continue to develop and integrate a greater variety of Imagery Intelligence sources and geospatial visualization capabilities in the GPL.	2.900	2.970	2.970
Accomplishments/Planned Programs Subtotals	83.474	57.215	26.854

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPAF, PE 0305208F, Distributed C...: *OPAF, PE 0305208F*	271.015	215.146	99.466	0.000	99.466	95.917	136.398	93.294	100.537	Continuing	Continuing
• O&M, PE 0305208F, Distibuted...: *O&M, PE 0305208F*	357.067	798.775	324.241	0.000	324.241	368.061	372.381	429.734	437.954	Continuing	Continuing

D. Acquisition Strategy

The Air Force has changed the AF DCGS acquisition strategy from a single block upgrade to programs that will deliver the following families of capabilities to the fielded baseline while meeting emerging operational requirements and continuing to develop and integrate new/upgraded sensors: GEOINT, Systems Release Upgrades, Data Links, and NetComms.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*	**PROJECT** 674826: *Common Imagery Ground / Surface Systems*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*	**PROJECT** 674826: *Common Imagery Ground / Surface Systems*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Capabilities Upgrades	1	2011	4	2017
Geospatial Intelligence (GEOINT) Upgrades	1	2011	4	2017
Systems Review Upgrades	1	2011	4	2017
Datalink Upgrades	1	2011	4	2017
Network Communications upgrades	1	2011	4	2017
DIB	1	2011	4	2017
DCGS-I Testbed	1	2011	4	2017
Commercial Satellite Imagery	2	2011	3	2017

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305208F: *Distributed Common Ground Systems*	PROJECT 675265: *Common Imagery Processor (CIP)*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
675265: *Common Imagery Processor (CIP)*	10.798	10.709	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

Note

NOTE: Beginning in FY13, the efforts in this BPAC are being moved from Program Element (PE) 0305208F to this PE 0305240F, "Support to DCGS Enterprise". AF is Lead Service for CIP under the auspices of USD(I) and the new PE was created to improve visibility into the lead service efforts.

A. Mission Description and Budget Item Justification

The Common Imagery Processor (CIP) is a major interoperability initiative to develop a common sensor processing element within the DCGS Imagery architecture. The function of the CIP is to accept imagery data, process it into an exploitable image, and output the image to other elements within DCGS. Efforts are underway to augment the CIP baseline to process data from upgraded/new sensors.

Activities alson include studies and analysis to support both current program planning and execution and future program planning.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Common Imagery Processor	10.798	10.709	-
Description: Continue to develop the CIP to keep pace with growing sensor baseline. (Baseline includes Global Hawk, F/A-18, ad U-2 sensors). ***FY 2011 Accomplishments:*** Continued to evolve the CIP and its associated architecture to keep pace with growing sensor baseline to include new and upgraded sensors. Continued to investigate and implement advanced processing tools. ***FY 2012 Plans:*** Continue to evolve the CIP and its associated architecture to keep pace with growing sensor baseline to include new and upgraded sensors. Continue to investigate and implement advanced processing tools.			
Accomplishments/Planned Programs Subtotals	10.798	10.709	-

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305208F: *Distributed Common Ground Systems*	PROJECT 675265: *Common Imagery Processor (CIP)*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• 1: *OPAF, PE 0305208F, Distributed Common Ground System*	3.200	3.200	3.300	0.000	3.300	3.399	3.501	3.571	3.642	Continuing	Continuing

D. Acquisition Strategy

For the CIP, the Air Force uses an evolutionary acquisition approach with blocks (increments) and spirals to develop, field, and upgrade the system and structure contracts for the improved capabilities through full and open competition to the maximum extent possible.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*	**PROJECT** 675265: *Common Imagery Processor (CIP)*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*	**PROJECT** 675265: *Common Imagery Processor (CIP)*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
CIP 8.1 Software Release	1	2011	1	2011
CIP 8.2 Software Release	3	2011	3	2011
CIP 9.1 Software Release	4	2011	4	2011
CIP 10.0 Software Release	2	2012	2	2012
CIP 10.1 Software Release	4	2012	4	2012
Sensors - Evolutionary Development	1	2011	4	2017
Processors - Evolutionary Development	1	2011	4	2017
Standards - Evolutionary Development	1	2011	4	2017
Architecture - Evolutionary Development	1	2011	4	2017

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305208F: *Distributed Common Ground Systems*	PROJECT 676025: *Data Compression*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
676025: *Data Compression*	-	17.800	29.699	-	29.699	9.175	2.714	1.004	1.492	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

This initiative will provide the warfighter a capability to efficiently compress and decompress airborne ISR sensor data and transmit real/near-real time to tactical users through current and future band-width limited commercial SATCOM or Wideband Global Satellite (WGS). The effort will develop, test and implement new sensor data compression/decompression algortihms for current and emerging airborne ISR sensors. Correspondingly, the program develops compression/decompression capabilities for manned and unmanned airborne platforms (for example, Global Hawk), associated ground stations, and DCGS. Outputs will meet standard certification for use within the DoD Imagery Intelligence (IMINT)/Measurement and Signatures (MASINT) architecture.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Data Compression	-	17.800	29.699
Description: The program will develop and test compression/decompression algorithms for airborne ISR sensor data, then will build, integrate and test sensor specific hardware (with the algorithms embedded) for onboard data compression. The effort will focus initially on compression/decompression Global Hawk (GH) complex Synthetic Aperture Radar (SAR) data followed by applications of compression technologies to other DoD IMINT/ MASINT sensor data (i.e., detected SAR, Spectral, Electro-Optical/Infrared (EO/IR), Light Detection and Ranging (LIDAR), Laser Radar (LADAR), Video) and ground architecture. Outputs will meet DoD standard certification. ***FY 2012 Plans:*** Develop compression /decompression capabilities for GH complex SAR data and other DoD IMINT /MASINT sensor data. Develop DoD standard certification plan with NGA. Prepare integration effort with GH program office for future integration of new data compression capabilities. ***FY 2013 Plans:*** Continue GH complex SAR data compression and development and testing of other sensor data compression capabilities. Continue DoD certification activities. Will award contract to integrate compression capabilities in Global Hawk sensor and communications systems.			
Accomplishments/Planned Programs Subtotals	-	17.800	29.699

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305208F: *Distributed Common Ground Systems*	PROJECT 676025: *Data Compression*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• N/A: *N/A*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

The Data Compression acquisition approach will be to design and develop compression/decompression technology hardware and software components, interfaces and standards for various airborne ISR platforms and ground stations utilizing existing contracts and with full and open competition where appropriate.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*	**PROJECT** 676025: *Data Compression*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*	**PROJECT** 676025: *Data Compression*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Compression Module Development	1	2012	4	2015
Test and Evaluation of Compression Module	3	2013	3	2016
DoD Certification of Compression Module	1	2014	1	2017
Aircraft Integration	3	2013	2	2017

Exhibit R-2A, RDT&E Project Justification: PB 2013 Air Force			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	R-1 ITEM NOMENCLATURE PE 0305208F: *Distributed Common Ground Systems*	PROJECT 676028: *Dynamic Time Critical Warfighting Capability*	

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
676028: *Dynamic Time Critical Warfighting Capability*	-	-	6.948	-	6.948	7.059	7.201	7.404	7.502	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

Dynamic Time Critical Warfighting Capability (DTCWC) fuses Electronics Intelligence (ELINT) and Imagery in an upstream data fusion methodology that greatly improves target of interest identification and geolocation timeliness and accuracy. While not part of the AF DCGS weapon system, this Military Intelligence Program funded capability will initially fuse ISR feeds outside of AF DCGS while leveraging AF DCGS for access to multiple raw ISR data feeds. The primary aim of this capability is to support the targeting process, with likely outputs to the AOC.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: Dynamic Time Critical Warfighting Capability (DTCWC)	-	-	6.948
Description: Fuse ELINT and Imagery in an up-stream data fusion methodology that greatly improves target of interest identification and geolocation timeliness and accuracy. ***FY 2013 Plans:*** Will continue efforts to add additional sensors and sensor modalities to DTCWC fusion engine. Will refine current algorithms to allow for target detection in added environments and terrain types. Will add new target sets to the existing DTCWC targets list.			
Accomplishments/Planned Programs Subtotals	-	-	6.948

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• N/A: *N/A*	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

D. Acquisition Strategy

DTCWC uses the acquisition strategy of providing spiral releases of software and capabilities. A sole-source contract has been awarded to Johns Hopkins University Applied Physics Lab due to their evolutionary approach to upstream data fusion.

E. Performance Metrics

Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

Exhibit R-4, RDT&E Schedule Profile: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*	**PROJECT** 676028: *Dynamic Time Critical Warfighting Capability*

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Air Force		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 3600: *Research, Development, Test & Evaluation, Air Force* BA 7: *Operational Systems Development*	**R-1 ITEM NOMENCLATURE** PE 0305208F: *Distributed Common Ground Systems*	**PROJECT** 676028: *Dynamic Time Critical Warfighting Capability*

Schedule Details

	Start		End	
Events	**Quarter**	**Year**	**Quarter**	**Year**
Operational Integration Efforts	1	2011	3	2017
Sensors - Evolutionary Development	1	2011	4	2017
Processors - Evolutionary Development	1	2011	4	2017
Standards - Evolutionary Development	1	2011	4	2017
Architecture - Evolutionary Development	1	2011	4	2017